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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,745	09/30/2004	Yuko Kawaguchi	2004_1492A	4363
513 7590 09/06/2007 WENDEROTH, LIND & PONACK, L.L.P. 2033 K STREET N. W. SUITE 800 WASHINGTON, DC 20006-1021			EXAMINER HEYI, HENOK G	
			ART UNIT 2627	PAPER NUMBER
			MAIL DATE 09/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,745

Applicant(s)

KAWAGUCHI ET AL.

Examiner

Henok G. Heyi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.

VU LE
SUPERVISORY PATENT EXAMINER

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki et al., JP 2001-229542 (Hiroaki hereinafter), and further in view of Toshiyuki, JP 2000-011453 and Takeshi, JP 2001-216686.

Re claim 1, Hiroaki teaches an optical recording medium which includes a main-information area in which a metal reflection film is formed on a substrate where a row of pits is formed as main data, and a sub information area in which medium identification information is recorded which is used to identify the optical recording medium individually by removing the metal reflection film partially and forming a plurality of reflection-film removed areas (the main information field which can record an

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information signal, and said information signal are divided and equipped with the subinformation field which records the subinformation from which a class differs in the direction of 1 principal plane of a substrate, para [0014]); but he does not teach about track pitch size. However, Toshiyuki teaches that information is reproduced by irradiating the metal reflection film with a beam of light, characterized in that, in the sub-information area, a row of pits or a groove is formed on the substrate, and the track pitch of the row of pits or the groove is $0.24\mu\text{m}$ or wider and $0.45\mu\text{m}$ or narrower (the track pitch is set to $0.27\mu - 0.404\mu\text{m}$, para [0004]). Therefore, the combined teaching of Hiroaki and Toshiyuki would have rendered obvious to have an optical recording medium with main and subordinate information areas with specific track pitch sizes.

Re claim 2, applicant claims the optical recording medium according to claim 1, characterized in that the reflectance ratio of the metal reflection film is 35% or higher and 70% or lower, with respect to a beam of light whose wavelength is 405 nm. As it is shown in the specification the reflectance ratio corresponds to film thickness and the film thickness suggested in the specification is 15nm to 40nm. Takeshi teaches a film thickness of the range 5-30nm (para [0019]). It is fairly obvious for one skilled in the art to have film thickness in this range or close enough to control the reflectance ratio. And the wavelength that is claimed is widely known in the art. Therefore, the combined

teaching of Hiroaki, Toshiyuki and Takeshi would have rendered obvious to have an optical recording medium with reflectance ratio of the metal that corresponds with the film thickness to give certain needed ratio.

Re claim 3, Takeshi teaches the optical recording medium according to claim 1, characterized in that the metal reflection film is made of Ag or an Ag alloy material, and the film thickness of the metal reflection film is 30nm or above and 100nm or below (para [0016]).

Re claim 4, Takeshi teaches the optical recording medium according to claim 1, characterized in that the metal reflection film is made of Al or an Al alloy material, and the film thickness of the metal reflection film is 15nm or above and 40nm or below (para [0004] and [0019])

Re claim 5, applicant claims the optical recording medium according to claim 1, characterized in that if the wavelength of a light source of the beam of light is λ and the refractive index of a resin layer which is formed on the metal reflection film is n , the depth D of a row of pits or a groove which is formed on the substrate in the sub-information area satisfies a relational expression $\lambda/(6Xn) < D < \lambda/(3Xn)$. However, Toshiyuki teaches a pit depth that is between $\lambda/8$ and $\lambda/4$.

Re claim 6, applicant claims the optical recording medium according to claim 1, characterized in that the depth of a row of pits which is formed on the substrate in the main-information area is equal to the depth of a row of pits or a groove which is formed on the substrate in the sub-information area. However, it is obvious for one skilled in the art to make the pit depth in both information areas equal.

Re claim 7, Toshiyuki teaches the optical recording medium according to claim 1, characterized in that the track pitch of a row of pits which is formed on the substrate in the main-information area is $0.27\mu\text{m}$ or wider and $0.404\mu\text{m}$ or narrower, and the shortest pit of a row of pits which is formed on the substrate in the main-information area is $0.13\mu\text{m}$ or longer and $0.219\mu\text{m}$ or shorter (para [0004]).

Re claim 8, applicant claims the optical recording medium according to claim 1, characterized in that the track pitch of a row of pits which is formed on the substrate in the main-information area is equal to the track pitch of a row of pits or a groove which is formed on the substrate in the sub-information area. However, it is obvious to one skilled in the art to use the same track pitch in the main and subsidiary information area.

Re claim 9, applicant claims the optical recording medium according to claim 8, characterized in that the track pitch of a row of pits which is formed on the substrate in the main-information area and the track pitch of a row of pits or a groove which is

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formed on the substrate in the sub-information area are $0.24\mu\text{m}$ or wider and $0.43\mu\text{m}$ or narrower. However, Toshiyuki describes a track pitch between $0.27\mu\text{m}$ and $0.404\mu\text{m}$.

Re claim 10, the optical recording medium according to claim 1, characterized in that the optical recording medium is a multi-layer optical recording medium having a plurality of metal reflection films formed by laminating as the metal reflection film is a well known thing in the art before this application.

Re claim 11, Hiroaki teaches an optical recording medium which includes a main-information area in which a metal reflection film is formed on a substrate where a row of pits is formed as main data, and a sub information area in which medium identification information is recorded which is used to identify the optical recording medium individually by removing the metal reflection film partially and forming a plurality of reflection-film removed areas (the main information field which can record an information signal, and said information signal are divided and equipped with the subinformation field which records the subinformation from which a class differs in the direction of 1 principal plane of a substrate, para [0014]); but he does not teach about track pitch size. However, Toshiyuki teaches that information is reproduced by irradiating the metal reflection film with a beam of light, characterized in that, in the sub-information area, a row of pits or a groove is formed on the substrate, and the track pitch of the row of pits or the groove is $0.24\mu\text{m}$ or wider and $0.45\mu\text{m}$ or narrower (the track pitch is set to $0.27\mu - 0.404\mu\text{m}$, para [0004])

Re claim 12, applicant claims the optical recording medium according to claim 11, characterized in that the reflectance ratio of the metal reflection film is 35% or higher and 70% or lower, with respect to a beam of light whose wavelength is 405 nm. As it is shown in the specification the reflectance ratio corresponds to film thickness and the film thickness suggested in the specification is 15nm to 40nm. Takeshi teaches a film thickness of the range 5-30nm (para [0019]). It is fairly obvious for one skilled in the art to have film thickness in this range or close enough to control the reflectance ratio. And the wavelength that is claimed is widely known in the art.

Re claim 13, Takeshi teaches the optical recording medium according to claim 11, characterized in that the metal reflection film is made of Ag or an Ag alloy material, and the film thickness of the metal reflection film is 30nm or above and 100nm or below (para [0016]).

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Re claim 14, Takeshi teaches the optical recording medium according to claim 11, characterized in that the metal reflection film is made of Al or an Al alloy material, and the film thickness of the metal reflection film is 15nm or above and 40nm or below (para [0004] and [0019]).

Re claim 15, applicant claims the optical recording medium according to claim 11, characterized in that if the wavelength of a light source of the beam of light is λ and the refractive index of a resin layer which is formed on the metal reflection film is n , the depth D of a row of pits or a groove which is formed on the substrate in the sub-information area satisfies a relational expression $\lambda/(6Xn) < D < \lambda/(3Xn)$. However, Toshiyuki teaches a pit depth that is between $\lambda/8$ and $\lambda/4$.

Re claim 16, applicant claims the optical recording medium according to claim 11, characterized in that the depth of a row of pits which is formed on the substrate in the main-information area is equal to the depth of a row of pits or a groove which is formed on the substrate in the sub-information area. However, it is obvious for one skilled in the art to make the pit depth in both information areas equal.

Re claim 17, Toshiyuki teaches the optical recording medium according to claim 11, characterized in that the track pitch of a row of pits which is formed on the substrate in the main-information area is $0.27\mu\text{m}$ or wider and $0.404\mu\text{m}$ or narrower, and the

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shortest pit of a row of pits which is formed on the substrate in the main-information area is $0.13\mu\text{m}$ or longer and $0.219\mu\text{m}$ or shorter (para [0004]).

Re claim 18, applicant claims the optical recording medium according to claim 11, characterized in that the track pitch of a row of pits which is formed on the substrate in the main-information area is equal to the track pitch of a row of pits or a groove which is formed on the substrate in the sub-information area. However, it is obvious to one skilled in the art to use the same track pitch in the main and subsidiary information area.

Re claim 19, it is a common practice to simultaneously form the pit row of the main information area, the pit row of the subsidiary information area and guide grooves.

Re claim 20, Hiroaki teaches an optical recording medium which includes a main-information area in which a metal reflection film is formed on a substrate where a row of pits is formed as main data, and a sub information area in which medium identification information is recorded which is used to identify the optical recording medium individually by removing the metal reflection film partially and forming a plurality of reflection-film removed areas (the main information field which can record an information signal, and said information signal are divided and equipped with the subinformation field which records the subinformation from which a class differs in the direction of 1 principal plane of a substrate, para [0014]); but he does not teach about track pitch size. However, Toshiyuki teaches that information is reproduced by

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irradiating the metal reflection film with a beam of light, characterized in that, in the sub-information area, a row of pits or a groove is formed on the substrate, and the track pitch of the row of pits or the groove is $0.24\mu\text{m}$ or wider and $0.45\mu\text{m}$ or narrower (the track pitch is set to $0.27\mu - 0.404\mu\text{m}$, para [0004]).

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art documents in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art documents in their entirety since other areas of the documents may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W. L. Gore & associates, Inc. V. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. Denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed..." *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

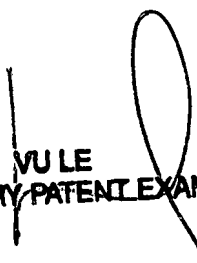
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henok G. Heyi whose telephone number is (571) 270-1816. The examiner can normally be reached on Monday to Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HGH


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SUPERVISORY PATENT EXAMINER